

DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION

A-593
Revision 2
SIKORSKY
S-43
S-43B
S-43W
(See NOTE 5)
March 1, 1954

AIRCRAFT SPECIFICATION NO. A-593

Manufacturer Sikorsky Aircraft
Division of United Aircraft Corp.
Bridgeport, Conn.

I - Models S-43 & S-43B, 19 PCAmM or 19 PCFbM, Approved December 24, 1935 (See NOTE 5 for S-43W, serial No. 4327)

Engines	2 P & W Hornets S1E-G (See NOTE 3 for P & W Hornets S2E-G and NOTE 5 for Wright Cyclones 704C9GC-1)
Fuel	87 min. octane aviation gasoline
Engine limits (See Engine Spec. for early type imp.)	Maximum continuous (Straight line manifold pressure variation with alt. to 5500 ft.) 35 in.Hg., 2275 rpm (800 hp) (S.L.) 36 in.Hg., 2275 rpm (800 hp) Take-off (one minute) 40.5 in.Hg., 2300 rpm (875 hp) or 40.5 in.Hg., 2500 rpm (850 hp)
Airspeed limits	Level flight or climb 185 mph True Ind. (161 knots) Glide or dive 216 mph True Ind. (188 knots) Flaps extended 0° to 20°, 135 mph True Ind. (117 knots) Over 20°, 90 mph True Ind. (78 knots)
Propellers	Ham. Std. 3E50 hubs with 6105A-18 to 6105A-20 blades. Dia.: 11'6-3/8" max., 11'3-3/8" min. For interchangeabale blade models see Prop. Spec. No. 246 (NOTE 6). Low pitch setting 16°. See Item 207 for optional propeller.
Ceiling	5700 ft. absolute (density altitude) either engine inoperative (landing gear in up position and flaps extended 5°). See Item 208 for ceiling with twin vertical tails and NOTE 4 for 20,000 lbs. weight.
C.G. range	(212) to (228.4)
Datum	Nose of the standard hull
Maximum weight	19,500 lbs. (Dump valves inoperative). See NOTE 4 for 20,000 lbs.
No. seats	19 maximum

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Baggage	Maximum capacity of compts.:
S-43 (Amphibian or flying boat)	Right front 1950 lbs. (141)
	Left front 500 lbs. (134)
	Right rear 300 lbs. (387))Each compt. replaces one seat.
	Left rear 300 lbs. (387))
	Right rear 400 lbs. (410))Each compt. replaces two pass. seats
	Left rear 400 lbs. (410))in aft compt.
S-43B (Flying boat)	Same as S-43 PLUS:
	Right center 100 lbs. (196)
	Left center 100 lbs. (196)
Fuel capacity	400 gals. (4 tanks, 2 at 100 gals. in each wing) (247)
Oil capacity	28 gals. (Actual capacity 44 gals., 2 tanks at 22 gals. each in engine nacelles) (177 or 210)
Serial Nos. eligible	4301 and up
Required equipment	(Amphibian) 101, 102

Specifications Pertinent to All Models

Certification basis	Type Certificate No. 593 (Aero Bulletin 7A requirements)
Production basis	None. Prior to original certification of each aircraft manufactured subsequent to Feb. 10, 1941, a CAA representative must perform a detailed inspection for workmanship, materials, and conformity with the approved technical data, and a check of the flight characteristics.
Export eligibility	Eligible for export to all countries subject to the provisions of MOP 2-4.

Equipment:

Propellers and Propeller Accessories

207. Ham. Std. propellers, hubs 23E50 with blades 6153-18. For interchangeable blade models see Propeller Spec. No. 603 (NOTE 6). Dia.: Max. 11'6-3/8", min. allowable for repairs 11'3-3/8". Low pitch setting 16°.

Engines and Engine Accessories - Fuel and Oil System

See NOTE 3 for optional engines.

201. 540 gal. fuel capacity (2 additional tanks, one at 70 gals. each wing back of engine nacelle and fwd. of 100 gal. tanks) (226)
202. 510 gal. fuel capacity (2 additional tanks, one at 55 gals. in each wing back of engine nacelle and fwd. of 100 gal. tanks.) (Weight of complete installation 75 lbs.) (212)
203. 605 gal. fuel capacity (2 additional tanks, one at 47 1/2 gals. in each wing back of rear spar (252) plus the additional fuel tanks covered by item 202)

Landing Gear

101. 45 in. streamline wheels (Autofan) with hyd. brakes and special 10-ply General model S-100 tires (Wheels must be placarded for these tires) (196)
102. 18 in. streamline tail wheel and special 6-ply General tire. Inflation pressure of 53 lbs. required. (Wheel must be placarded for this tire and pressure) (460)

Miscellaneous (Not listed above)

204. Two additional fins on stabilizer
205. Elevator tab installation replacing adjustable stabilizer mechanism
206. Modified bow, extending 24 in. fwd. of original bow

208. Twin vertical tails

Ceiling with S1E-G engines:

- (1) 0 ft. usable in standard air at 20000 lbs. with either engine inoperative and the inoperative propeller idling in high pitch.
- (2) 4000 ft. usable in standard air at 20000 lbs. at an indicated airspeed of 107 mph with either engine inoperative, the inoperative propeller feathered and the remaining engine operating at 2275 rpm and 35 in.Hg. manifold pressure (when item 207 is installed.)

NOTE 1. Current weight and balance report including list of equipment included in certificated weight empty, and loading instructions when necessary, must be in each aircraft at the time of original certification and at all times thereafter (except in the case of air carrier operators having an approved weight control system).

NOTE 2. The flying boat type may be either of two constructions:

- (a) S-43 Amphibian type converted to flying boat by removal of landing gear installation and the installation of a wheel well cover.
- (b) S-43B Constructed originally as flying boat type. In this case bulkhead No. 8 is redesigned and No. 9 is omitted. The letter B is affixed to the model designation to identify this type. (Sometimes this type is referred to as S-43 boat.)

NOTE 3. Also approved with 2 P&W Hornet S2E-G engines with the following:

Engine limits	Maximum continuous,
(See ENGINE SPEC. for early type imp.)	(Straight line manifold pressure variation with altitude to 2500 ft. 33.5 in.Hg., 2250 rpm (750 hp) (Sea level) 33.5 in.Hg. 2250 rpm (735 hp) Take-off (one minute), 36.0 in.Hg., 2300 rpm (800 hp)
Airspeed limits	Same as for S1E-G engines except that if maximum weight is reduced to 19000 lbs. they may be increased to: Level flight or climb 190 mph True Ind. (165 knots) Glide or dive 225 mph True Ind. (195 knots)
Propellers	Same as for S1E-G engines except low pitch setting 18°
Ceiling	4250 ft. absolute (density altitude) either engine inoperative (landing gear in up position) with maximum weight of 19000 lbs. 3800 ft. absolute (density altitude) either engine inoperative with maximum weight of 19500 lbs. Undetermined at 20000 lbs.

NOTE 4. All aircraft are eligible for a maximum weight of 20,000 lbs., provided that a 20-inch 6- ply tail wheel tire or a 6-ply H.D. smooth contour tail wheel tire, with suitable fork in either case, are installed. Ceiling 2800 feet with S1E-G engines.

NOTE 5. Airplane Serial No. 4327 is a Model S-43W, 12 PCAmM, except for the engine installations and certain wing and fuselage modifications accomplished in accordance with Hughes Aircraft Company technical data, and is eligible for certification with the following limitations:
Engines 2 Wright Cyclones 704C9GC-1 (Military R1820-87)

Fuel	91 octane min.
Engine limits	(Low blower only. Excessive head temperatures preclude high blower operation.) Maximum continuous, (Straight line manifold pressure variation with alt. to 6700 ft.) 37.2 in.Hg. 2300 rpm (1000 hp) (S.L.) 39.4 in.Hg. 2300 rpm (1000 hp) Take-off (two minutes) 45.5 in.Hg. 2500 rpm (1200 hp)
Airspeed limits	Level flight or climb 184 mph True Ind. (161 knots) Glide or dive 216 mph True Ind. (188 knots) flaps retracted Flaps extended 0° to 20° 135 mph True Ind. (117 knots) Flaps extended over 20° 90 mph True Ind. (78 knots)

Propellers	Ham. Std. 23E50 hubs with 6353A-18 to -20 blades. Dia.: 11' 6-3/8" max., 11' 3-3/8" min. Min. pitch settings: Low 18°, High 88°.			
C.G. range	(+216) to (+228.4) (Fwd. limit established by trim requirements)			
Datum	Nose of the standard hull			
Leveling means	Pins in L. H. Wheel well at stations 227 and 249.			
Maximum weight	20,000 lbs.			
Passengers	Max. 10 (See approved weight and balance report, Hughes Report No. 196W, for locations.)			
Minimum crew	2 - Pilot and Co-pilot			
Baggage	250 lbs. (+420)			
Fuel capacity	400 gals. (4 tanks, 2 per wing, 100 gals, each (+247)			
Oil capacity	44 gals. (2 tanks, 22 gals. each, one per nacelle) (+210)			
Control surface movements	Elevator	Up	30°	Down 24°
	Aileron	Up	25°	Down 19°
	Rudder	Left	21.5°	Right 21.5°
	Flaps			Down 38°
	Elevator tab	Up	21.5°	Down 25°
	Aileron tab	Up	11°	Down 8.5°
	Rudder tab	Left	10°	Right 10°
Serial Nos. eligible	No. 4327 only			
Required equipment	(1) Equipment as listed in Hughes Report No. 196W, or approved equivalents thereof. (2) CAA Approved Flight Manual, Hughes Report No. 198 (3) Carburetor alcohol anti-icing system.			

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